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EXAMINER

RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
2665	11

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,636

Applicant(s)

MERANI ET AL.

Examiner

Daniel J. Ryman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28,30-43 and 45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28,30-43 and 45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 4, 6-16, 18-28, 30, 31, 33-43, and 45 have been considered but are moot in view of the new ground(s) of rejection.
2. Applicant's arguments filed 5/21/2004 have been fully considered but they are not persuasive with regards to claims 2, 3, 5, 17, and 32. On pages 23-24 and 27, Applicant argues, with respect to claims 2, 3, 5, 17, and 32, that "Sriram does not teach dividing a total amount of data, based upon an individual weight assigned to each of a plurality of queues, into an amount of data that each of said queues may service". Examiner, respectfully, disagrees. Sriram teaches allotting each queue a set amount of bandwidth out of the total amount of bandwidth on the link (Fig. 5 and col. 5, line 51-col. 6, line 62). For instance, Sriram discloses allotting the voice queue 10 Mb/s out of the 150 Mb/s of bandwidth available (30 cells out of 450) while allotting the video queue 20 Mb/s out of the 150 Mb/s (60 cells out of 450). Since the claim does not specify how the weight is determined or applied, as broadly defined, Sriram's allocation process reads on dividing a total amount of data (150 Mb/s), based upon an individual weight assigned to each of a plurality of queues (voice: 1/15 of total bandwidth and video: 2/15 of total bandwidth), into an amount of data that each of said queues may service (voice: 10Mb/s and video: 20 Mb/s). As such, Examiner maintains that the rejection of claims 2, 3, 5, 17, and 32 is proper.
3. On page 27, Applicant argues that Sriram does not disclose "that each of the queues is capable of holding one or more packet identifiers, each of the one or more packet identifiers pointing to its own packet". Examiner agrees which is why Examiner combined Sriram with Hoffman. It is the combination of Sriram and Hoffman which discloses that each of the queues is

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capable of holding one or more packet identifiers, each of the one or more packet identifiers pointing to its own packet, not Sriram individually. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references.

See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). As such, Examiner maintains that the rejection of claims 3, 5, 17, and 32 is proper.

4. On pages 27-28, Applicant further argues that “Sriram does not teach or suggest that the plurality of queues ranges from a highest priority queue to a lowest priority queue”. Again, Examiner, respectfully, disagrees. As Applicant admits, Sriram discloses “segregating communication traffic” and “that the queues are visited in a sequential fashion” (Sriram: Fig. 7). Since the claim does not specify how the priority is determined or applied, as broadly defined, the sequence number of the queue (Fig. 7: ref. i) reads on a priority for a queue where a lower index number indicates a higher priority. As such, Examiner maintains that the rejection of claims 3, 5, 17, and 32 is proper.

5. On pages 30-31 of the Response, Applicant argues that there is no suggestion or motivation to combine the references. Examiner, respectfully, disagrees. Examiner has explicitly stated in the rejection the motivation to combine the references. For instance, Examiner explains that it is implicit in Hoffman that using packet identifiers in the queue rather than the packet itself eliminates the need to transfer an entire packet throughout a node. Thus, Examiner maintains that there is a motivation to combine the references.

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6. Given the above arguments, Examiner maintains the rejection of the claims. Examiner urges Applicant to amend the claims to add additional limitations which will distinguish the claims from the prior art.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Sriram (USPN 5,463,620).

9. Regarding claim 2, Sriram discloses a method, comprising: a) dividing a total amount of data, based upon an individual weight assigned to each of a plurality of queues, into an amount of data that each of said queues may service (Fig. 5; col. 1, lines 58-col. 2, line 9; and col. 5, line 51-col. 6, line 62); b) servicing one or more populated queues, each of said servicing of a populated queue continuing until said populated queue is no longer populated or said amount of data determined for said populated queue has been released (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65); and c) servicing one or more of said queues that remain populated, if any, until said total amount of data has been released from all of said queues in combination including said servicing of said populated queues (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1, 3-14, 16, 17, 19, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sriram (USPN 5,463,620) in view of Hoffman et al (USPN 6,094,435).
12. Regarding claims 1, 3, 17, and 32, Sriram discloses a method and apparatus, the method comprising the steps of and the apparatus comprising a scheduler for: a) distributing a partition worth of data (bandwidth) across a plurality of queues according to a weight assigned to each of said queues so that each of said queues has its own sub-partition worth of data (Fig. 5; col. 1, lines 58-col. 2, line 9; and col. 5, line 51-col. 6, line 62), said plurality of queues ranging from a highest priority queue to a lowest priority queue (col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62); said queues serviced by said scheduler until each of said corresponding weights is consumed for each queue (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), and wherein higher priority queues are serviced before lower priority queues (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65); b) flowing a flow of one or more packet identifiers from an active populated queue, until either: 1) its unpopulated if less than its sub-partition worth of data has flowed (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), 2) its sub-partition worth of data has flowed (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), or 3) the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), wherein a populated queue is deemed active if it is the highest priority populated queue out of those of said populated queues that have not yet been deemed active, such that populated queues are deemed active in succession until the lowest

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priority populated queue has been deemed active or until the combination of flows from those of said queues that have been active results in said partition worth of data having flowed from said those of said queues that have been active, as a whole (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65); and c) if: 1) one or more populated queues exist after each of said populated queues has been active (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), and 2) said combination of flows from those of said queues that have been active results in less than said partition worth of data having flowed from said those of said queues that have been active, as a whole (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65); then: 1) flowing one or more additional flows from said one or more populated queues until said partition worth of data has flowed from said queues as a whole (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65), or until 2) each of said queues is unpopulated if each of said queues becomes unpopulated before said partition worth of data has flowed from said queues as a whole (Fig. 7; col. 6, lines 20-62; and col. 9, lines 25-65). Sriram does not expressly disclose that each of the queues is capable of holding one or more packet identifiers, where each of the one or more packet identifiers points to its own packet. Hoffman discloses, in a system for scheduling data from a node, having each of the queues be capable of holding one or more packet identifiers, where each of the one or more packet identifiers points to its own packet (col. 18, line 11-col. 19, line 20) where it is implicit that this is done in order to allow scheduling to be done without the need to transfer the entire packet to the scheduler. It would have been obvious to one of ordinary skill in the art at the time of the invention to have each of the queues be capable of holding one or more packet identifiers, where each of the one or more packet identifiers points to its own packet in order to allow scheduling to be done without the need to transfer the entire packet to the scheduler.

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13. Regarding claim 4, referring to claim 1, Sriram in view of Hoffman implicitly discloses that each of said packet identifiers further comprise the same Port-ID value that identifies a port to which said queues belong (Hoffman: col. 18, line 10-col. 19, line 20).

14. Regarding claim 5, referring to claim 4, Sriram in view of Hoffman discloses that the port handles packets destined to the same user (Hoffman: col. 7, lines 4-25 and col. 10, lines 21-30).

15. Regarding claim 6, referring to claim 1, Sriram in view of Hoffman discloses that one of said queues receives only those of said packet identifiers that each point to its own networking control packet (Sriram: col. 1, lines 18-35).

16. Regarding claim 7, referring to claim 4, Sriram in view of Hoffman discloses that one of said queues is said highest priority queue (Hoffman: col. 18, line 35-col. 21, line 35).

17. Regarding claim 8, referring to claim 1, Sriram in view of Hoffman discloses that one of said queues receives only those of said packet identifiers that each point to its own real time traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

18. Regarding claim 9, referring to claim 6, Sriram in view of Hoffman discloses that the one of said queues is a second highest priority queue (Hoffman: col. 18, line 35-col. 21, line 35).

19. Regarding claim 10, referring to claim 1, Sriram in view of Hoffman discloses that one of said queues receives only those of said packet identifiers that each point to its own fast data traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

20. Regarding claim 11, referring to claim 8, Sriram in view of Hoffman discloses that the one of said queues receives only those of said packet identifiers that each point to its own

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traditional data traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

21. Regarding claim 12, referring to claim 1, Sriram in view of Hoffman discloses that the partition worth of data is a scheduling cycle partition worth of data, wherein one scheduling cycle partition worth of data per scheduling cycle corresponds to a data rate that is a highest data rate managed by a networking system to which each of said queues belong (Hoffman: col. 18, line 35-col. 21, line 35).

22. Regarding claim 13, referring to claim 1, Sriram in view of Hoffman discloses that each of said weights add up to a value that represents 100% or less of said partition worth of data (Hoffman: col. 18, line 35-col. 21, line 35).

23. Regarding claim 14, referring to claim 11, Sriram in view of Hoffman does not expressly disclose that each of said weights are equal; however, Sriram in view of Hoffman does disclose the use of weights (Hoffman: col. 18, line 35-col. 21, line 35). Sriram in view of Hoffman also recognizes that variations of the disclosed embodiment are possible (Hoffman: col. 6, lines 30-40). Moreover, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Sriram in view of Hoffman discloses the use of

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weights, any value for the weights, including having the weights be of equal value, would have been obvious absent a showing of criticality by Applicant.

24. Regarding claim 16, referring to claim 1, Sriram in view of Hoffman discloses that if more than an active queue's sub-partition worth of data had flowed while it was active, the difference between the amount of data that flowed and said sub-partition worth of data is subtracted from said active queue's sub partition worth of data in order to reduce the flow the next time said active queue becomes active (Hoffman: col. 18, line 35-col. 21, line 35, esp. col. 21, lines 17-35).

25. Regarding claim 19, referring to claim 16, Sriram in view of Hoffman discloses that the port handles packets destined to the same user (Hoffman: col. 7, lines 4-25 and col. 10, lines 21-30).

26. Claims 15, 18, 20-28, 30, 31, 33-43, and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sriram (USPN 5,463,620) in view of Hoffman et al (USPN 6,094,435) as applied to claim 1 above, and further in view of Yin et al (USPN 5,982,748).

27. Regarding claim 15, referring to claim 1, Sriram in view of Hoffman does not expressly disclose that each of said weights add up to a value that represents more than 100% of said partition worth of data. Yin teaches, in a system for allocating bandwidth for traffic flows, over-subscribing a connection (each of said weights add up to a value that represents more than 100% of said partition worth of data) in order to allow additional connection requests that would otherwise be rejected (col. 7, lines 35-61). It would have been obvious to one of ordinary skill in the art at the time of the invention to have each of said weights add up to a value that represents

more than 100% of said partition worth of data in order to allow additional connection requests that would otherwise be rejected.

28. Regarding claim 30, referring to claim 15, Sriram in view of Hoffman in further view of Yin discloses that the flowing one or more additional flows further comprises flowing packet identifiers from a next queue, said next queue following a previous queue that flowed an additional flow to consume a previous distribution of a partition worth of data (Hoffman: col. 18, line 35-col. 21, line 35).

29. Regarding claims 18 and 33, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin implicitly discloses that each of said packet identifiers further comprise the same Port-ID value that identifies a port to which said queues belong (Hoffman: col. 18, line 10-col. 19, line 20).

30. Regarding claims 20 and 35, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that one of said queues receives only those of said packet identifiers that each point to its own networking control packet (Sriram: col. 1, lines 18-35).

31. Regarding claims 21 and 36, referring to claims 18 and 33, Sriram in view of Hoffman in further view of Yin discloses that the one of said queues is said highest priority queue (Hoffman: col. 18, line 35-col. 21, line 35).

32. Regarding claims 22 and 37, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that one of said queues receives only those of said packet identifiers that each point to its own real time traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

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33. Regarding claims 23 and 38, referring to claims 20 and 35, Sriram in view of Hoffman in further view of Yin discloses that the one of said queues is a second highest priority queue (Hoffman: col. 18, line 35-col. 21, line 35).

34. Regarding claims 24 and 39, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that one of said queues receives only those of said packet identifiers that each point to its own fast data traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

35. Regarding claims 25 and 40, referring to claims 22 and 37, Sriram in view of Hoffman in further view of Yin discloses that one of said queues receives only those of said packet identifiers that each point to its own traditional data traffic packet (Sriram: col. 1, lines 58-col. 2, line 9; col. 3, line 56-col. 4, line 63; and col. 5, line 51-col. 6, line 62).

36. Regarding claims 26 and 41, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that the partition worth of data is a scheduling cycle partition worth of data, wherein one scheduling cycle partition worth of data per scheduling cycle corresponds to a data rate that is a highest data rate managed by a networking system to which each of said queues belong (Hoffman: col. 18, line 35-col. 21, line 35).

37. Regarding claims 27 and 42, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that each of said weights add up to a value that represents 100% or less of said partition worth of data (Hoffman: col. 18, line 35-col. 21, line 35).

38. Regarding claims 28 and 43, referring to claims 25 and 40, Sriram in view of Hoffman in further view of Yin does not expressly disclose that each of said weights are equal; however, Sriram in view of Hoffman in further view of Yin does disclose the use of weights (Hoffman:

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col. 18, line 35-col. 21, line 35). Sriram in view of Hoffman in further view of Yin also recognizes that variations of the disclosed embodiment are possible (Hoffman: col. 6, lines 30-40). Moreover, it is generally considered to be within the ordinary skill in the art to adjust, vary, select, or optimize the numerical parameters or values of any system absent a showing of criticality in a particular recited value. The burden of showing criticality is on applicant. In re Mason, 87 F.2d 370, 32 USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471 (1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454, 105 USPQ 233 (CCPA 1055); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Since Sriram in view of Hoffman in further view of Yin discloses the use of weights, any value for the weights, including having the weights be of equal value, would have been obvious absent a showing of criticality by Applicant.

39. Regarding claims 31 and 45, referring to claims 15 and 30, Sriram in view of Hoffman in further view of Yin discloses that if more than an active queue's sub-partition worth of data had flowed while it was active, the difference between the amount of data that flowed and said sub-partition worth of data is subtracted from said active queue's sub partition worth of data in order to reduce the flow the next time said active queue becomes active (Hoffman: col. 18, line 35-col. 21, line 35, esp. col. 21, lines 17-35).

40. Regarding claim 34, referring to claim 31, Sriram in view of Hoffman in further view of Yin discloses that the port handles packets destined to the same user (Hoffman: col. 7, lines 4-25 and col. 10, lines 21-30).

Conclusion

41. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Parruck et al (USPN 6,198,723) see entire document, especially col. 9, line 66-col. 11, line 25 which discloses a scheduling system in which each of the queues are capable of holding one or more packet identifiers.

42. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (703)305-6970. The examiner can normally be reached on Mon.-Fri. 7:00-5:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703)308-6602. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Daniel J. Ryman
Examiner
Art Unit 2665

DJR

Daniel J. Ryman



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SUPERVISORY PATENT EXAMINER
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